

## **Title V**

### **Model General Permit Template**

#### **SERIES 2 METAL CAN SURFACE COATING OPERATIONS**

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#### **Template # SJV-MC-2-0**

metal can line surface coating facilities with:  
two-piece can exterior basecoat and overvarnish operations, and/or  
interior and exterior body- or end-spray or rollcoat operations and/or  
three-piece can side seam spray operations, and/or  
end sealing compound operations

including curing ovens that are induction heated or that fire on  
natural gas or propane

located at facilities that apply more than three gallons of coating per day

not a flat sheet basecoat or overvarnish operation nor a metal coil surface  
coating line

not a soft-drink or beer-can surface coating line

This template is designed to streamline the Title V permitting process for metal can surface coating operations meeting the above qualifications. Applicants for Title V permits choosing to use this template will only have to complete the enclosed template qualification form and submit it with their Title V application.

**San Joaquin Valley Unified Air Pollution Control District**

**Final**

**Title V Model General Permit Template  
Series 2 Metal Can Surface Coating Operations**

**Template No: SJV-MC-2-0**

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# **SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT**

## **TITLE V GENERAL PERMIT TEMPLATE SJV-MC-2-0**

### **ENGINEERING EVALUATION**

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## **I. Purpose**

The purpose of the proposed template is to streamline the Title V permitting process and reduce the time required by the applicant and the District by identifying the federally applicable requirements for certain metal can surface coating operations and establishing permit conditions which will ensure compliance with such requirements. These conditions will be incorporated into the Title V permit of any facility choosing to make use of the template.

## **II. Template Applicability**

The template applies to metal can surface coating operations which:

Are two-piece can exterior basecoat and overvarnish operations, and/or

Interior and exterior body- or end-spray or rollcoat, three-piece can side seam spray, and/or end sealing compound operations, and

May include curing ovens that are induction heated or are fired on natural gas or propane, and

Are part of a facility that applies more than three gallons of coating per day, and

Are not a flat sheet basecoat or overvarnish, metal coil surface, or soft-drink or beer-can coating operation.

The applicability of this template is determined by completion of the Template Qualification Form (TQF) attached as Appendix D. The completed and signed TQF must be submitted with the Title V application.

## **III. Applicable Requirements**

Units may be subject to “federally enforceable” requirements as well as requirements that are enforceable by the “District-only.” Federally enforceable requirements will be enforceable by the EPA, the District, and the public through Title V permit conditions identified as federally enforceable. District-only requirements represent local or state regulations for which the EPA has no direct enforcement authority. The final Title V permits issued by the District will contain both federally enforceable and District-only requirements.

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District-only requirements are not addressed in this template except for those used in streamlining of multiple requirements (see discussion in section IV). District-only requirements used in streamlining of multiple requirements will become federally enforceable. Table 1, Applicable Requirements, does not necessarily include all federally enforceable requirements that apply to metal can surface coating operations qualifying to use this template, and it is the source's responsibility to determine any and all applicable requirements to which the source is subject. Generally, requirements not addressed by this template are those that require a source-specific analysis, or are covered by other templates.

**Table 1. Applicable Requirements**

Rule Category	Rule/Regulation	Citation	Description
A	County Rule	404 <sup>1</sup>	Sulfur Compounds
A	County Rule	406 <sup>2</sup>	Sulfur Compounds
A	County Rule	407 <sup>3</sup>	Sulfur Compounds
A	SJVUAPCD Reg. II	2520, 9.1, 9.4.2, 9.5.2, and 13.2	Periodic Monitoring, Recordkeeping, and Permit Shields
A	SJVUAPCD Reg. IV	4201 <sup>4</sup>	Particulate Matter Concentration
A	SJVUAPCD Reg. IV	4604	Can and Coil Coating Operations
B	SJVUAPCD Reg. II	2201	New Source Review Rule
B	SJVUAPCD Reg. II	2520 <sup>5</sup>	Federally Mandated Operating Permits
B	SJVUAPCD Reg. IV	4101 <sup>6</sup>	Visible Emissions
C	New Source Performance Stds. Subpart WW	40CFR§60.490	Standards of Performance for the Beverage Can Surface Coating Industry
C	New Source Performance Stds. Subpart TT	40CFR§60.460	Standards of Performance for Metal Coil Surface Coating
C	SJVUAPCD Reg. IV	4661	Organic Solvents

<sup>1</sup> Madera - this template only covers compliance for sulfur compounds emitted from fuel combustion within curing ovens. Compliance for coatings, as applied, is site specific and must be addressed in the Title V application outside of this template

<sup>2</sup> Fresno - this template only covers compliance for sulfur compounds emitted from fuel combustion within curing ovens. Compliance for coatings, as applied, is site specific and must be addressed in the Title V application outside of this template.

<sup>3</sup> Kern, Kings, Merced, San Joaquin, Stanislaus, and Tulare - this template only covers compliance for sulfur compounds emitted from fuel combustion within curing ovens. Compliance for coatings, as applied, is site specific and must be addressed in the Title V application outside of this template.

<sup>4</sup> This template only covers compliance with District Rule 4201 for particulate matter emitted from fuel combustion within curing ovens. Compliance for particulate emissions from coatings applied is site specific and must be addressed in the Title V application outside of this template.

<sup>5</sup> Other than Category A requirements

<sup>6</sup> Portions of this rule are addressed in the facility-wide template SJV-UM-0-0.

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Category “A” rules contain requirements that are directly applicable to the qualifying units; compliance with these applicable requirements will be demonstrated in this engineering evaluation and assured by the template permit conditions. In section IV, Compliance, the federally-enforceable requirements from category “A” rules are listed with a discussion of how compliance with these requirements is achieved.

Category “B” rules contain federally enforceable requirements (aside from those listed as category A) that were not addressed in this template. These may not be all of the federally enforceable requirements for this unit. Requirements from these rules must be addressed by the applicant outside of this template within the Title V application Compliance Plan form (TVFORM-004). Category “B” listing is included in this table as an informational item to assist applicants in this effort.

Category “C” rules contain requirements which have been determined not to be applicable to qualifying units. A permit shield is proposed for the category “C” rules. An explanation of the determination of non-applicability of category “C” rules is included in section V, Permit Shield.

## IV. Compliance

This section contains a discussion of how compliance is assured with each requirement addressed in this template.

### **District Rule 2520, 9.1, 9.4.2 and 9.5.2**

Section 9.1 requires each permit to include emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance. This template addresses compliance with District Rule 4201 for curing ovens which are induction heated or fired on PUC natural gas or propane with specified sulfur content limits only. Condition #9 prohibits the use of types of curing ovens which are not addressed in this template. Requirements from 40 CFR 60, subpart WW, for soft drink or beer can operations are not addressed by this template. Condition #14 prohibits operation in any manner which could trigger applicability of subpart WW.

Section 9.4.2 requires that periodic monitoring be performed if none is associated with a given emission limit to assure compliance. County Rules 404 (Madera), 406 (Fresno), and 407 (Kern, Kings, Merced, San Joaquin, Stanislaus, and Tulare) limits sulfur emissions, but do not specify monitoring frequency or method to assure compliance. Compliance for induction heated and PUC regulated natural gas fired curing ovens is assured without testing. Template conditions addressing monitoring frequency and methods have been added which assure compliance for propane fired ovens (see conditions #10 and #11). District Rule 4604 does not specify a monitoring frequency for VOC coating content. Condition #12 requires annual testing for VOC coating content.

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Section 9.5.2 requires that records of all required monitoring shall be maintained for at least five years. Template permit condition #13 requires that all records be maintained for at least five years.

## **District Rule 4201**

District Rule 4201, section 3.1, limits the emission of dust, fumes, or total suspended particulate matter (PM) to 0.1 grain/dry standard cubic foot of gas. For the purposes of this template, compliance with District Rule 4201 will be addressed only for PM emitted from fuel combustion within the curing ovens.

Particulate matter emissions from coating applications are site specific since they are dependent upon production- and application-rate and solids contents of coatings. Consequently, compliance with District Rule 4201 limits must be addressed in the Title V application outside of this template.

Metal can coating lines that qualify to use this template are restricted to those with curing ovens that are induction heated or are fired on natural gas or propane only. The following analysis demonstrates compliance:

For natural gas,

$$\frac{\left(13.9 \frac{lb \text{ PM}}{10^6 \text{ cf}}\right) \left(7000 \frac{grain}{lb}\right)}{\left(950 \frac{Btu}{scf \text{ ng}}\right) \left(8710 \frac{dscf}{10^6 \text{ Btu}}\right)} = 0.01 \frac{grain}{dscf} \pi 0.1 \frac{grain}{dscf}$$

For propane,

$$\frac{\left(0.6 \frac{lb \text{ PM}}{10^3 \text{ gal}}\right) \left(7000 \frac{grain}{lb}\right)}{\left(0.094 \frac{MMBtu}{gal \text{ propane}}\right) \left(8710 \frac{dscf}{MMBtu}\right)} = 0.005 \frac{grain}{dscf} \pi 0.1 \frac{grain}{dscf}$$

where:

$$13.9 \frac{lb \text{ PM}}{10^6 \text{ cf}} = \text{PM emission factor for natural gas (AP-42, Table 1.4-1)}$$

$$7000 \frac{grain}{lb} = \text{conversion factor (AP-42, Appendix A)}$$

$$950 \frac{Btu}{scf \text{ ng}} = \text{minimum expected (i.e. worst case assumption) heating value of natural gas (AP-42, 1.4.1)}$$

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$$8710 \frac{dscf}{MMBtu} = F \text{ factor, } F_d, \text{ natural gas and for propane (40CFR60, App. A, Table 19-1)}$$

$$0.6 \frac{lb \text{ PM}}{10^3 \text{ gal}} = \text{PM emission factor for propane (AP-42, Table 1.5-1)}$$

$$0.094 \frac{MMBtu}{gal \text{ propane}} = \text{heating value of propane (AP-42, Appendix A)}$$

The preceding analysis shows the worst case expectation, 0.01 gr/dscf, is well within compliance of the limit. Therefore no testing, recordkeeping or monitoring for PM will be required. Condition #7 assures compliance for units using this template with District Rule 4201 for curing oven emissions.

### **District Rule 4604 (Formerly Rule 460.4)**

District Rule 4604 (Adopted April 11, 1991, Amended September 19, 1991, Amended December 17, 1992) is a renumbering of the requirements of SIP approved District Rule 460.4. This rule limits the volatile organic compound (VOC) content of the coatings used or applied during the manufacture of cans. Qualifying units achieve the emission limits implied by these content limits through the use of low VOC coatings.

Section 5.0 sets the limits for the content of VOC per liter of coating, excluding water and exempt compounds. The limit varies depending on the process. Units qualifying to use this template may achieve the emission limits implied by these content limits through the use of low VOC coatings only. See template permit conditions #1-4, depending on process.

Section 5.4 states that the use of coatings with VOC contents in excess of the limits specified in Section 5.1.1 are allowed provided that the emissions of VOC to the atmosphere is equivalent to the use of the coatings. This "equivalency" is site specific, thus any facility that is using an equivalency may not use this template.

Section 6.0 requires testing and recordkeeping of the processes covered by this template. Information must be maintained concerning coatings and solvents used, along with associated testing. See template permit conditions #5, #6, and #12.

### **Rule 404 (Madera County), Rule 406 (Fresno County), and Rule 407 (Kings, Kern, Merced, Tulare, Stanislaus, and San Joaquin)**

These county rules limit the emission of sulfur compounds to 0.2% by volume, calculated as sulfur dioxide (SO<sub>2</sub>). For the purposes of this template, compliance with these rules will be addressed only for sulfur emitted from fuel combustion within the curing ovens.

Sulfur emissions resulting from application or curing of coatings are site specific and are not addressed in this template since they are dependent upon production- and application-rate and sulfur content of coatings. Consequently, compliance with the county rule limits must be addressed in the Title V application outside of this template.

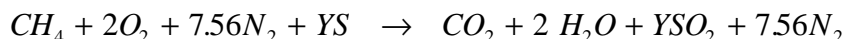


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Metal can coating lines that qualify to use this template may have curing ovens that are induction heated or that fire on natural gas or propane only. No sulfur compounds are emitted from induction heated ovens. Compliance is expected for Public Utilities Commission (PUC) regulated natural gas fired ovens because the fuel sulfur content of this fuel is not to exceed 0.017% by weight (see Appendix B). The following analysis demonstrates that compliance is assured:

Assuming 0% excess air in the exhaust stream corresponds with maximum  $\text{SO}_x$  emissions concentration, the combustion equation is (neglecting  $\text{NO}_x$  and  $\text{SO}_x$  relative to  $\text{SO}_2$  in the exhaust):



where:

Y = moles of sulfur in the fuel.

Solving an expression for the fraction of  $\text{SO}_2$  in the dry exhaust by volume gives:

$$\frac{Y}{1 + Y + 7.56} = 0.002 \Rightarrow Y = 0.01712$$

where:

Y = mole fraction of S per mole of  $\text{CH}_4$  combusted

1 = one mole of  $\text{CO}_2$

7.56 = number of moles of  $\text{N}_2$

0.002 = 0.2%  $\text{SO}_2$  by volume limit according to the cited rules

Use Y to calculate the weight fraction of S in one mole of  $\text{CH}_4$ :

$$\frac{(0.01712)(32.06)}{(16.04) + (0.01712)(32.06)} = 0.033 \Rightarrow 3.3\% \text{ S by weight in the fuel.}$$

where:

32.06 = molecular weight of sulfur (S)

16.04 = molecular weight of methane( $\text{CH}_4$ )

0.033 = fraction of S by weight in the fuel

The preceding calculation shows that an exhaust concentration of 0.2% sulfur by volume corresponds to a fuel sulfur content by weight of 3.3%. Because the fuel is the only source of sulfur being addressed, the weight percent of sulfur in the fuel is proportional to the exhaust  $\text{SO}_2$  concentration; therefore the volume exhaust concentration associated with combustion of natural gas with 0.017% sulfur is 0.001%. This value is fully three orders of magnitude less than allowable.

The use of PUC regulated gas with a maximum sulfur content of 0.017% will assure compliance with this requirement. See permit condition # 9.

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A similar analysis for propane combustion shows that shows that an exhaust concentration of 0.2% sulfur by volume corresponds to a fuel sulfur content by weight of 1.5%. Propane fuel contains at a maximum, 15 grains sulfur per 100 scf, maximum worst case<sup>7</sup>. The following equation converts this to a weight percent content:

$$\% S \left( \frac{lb\ S}{lb\ C_3H_8} \right) = \left( \frac{15\ gr}{100\ scf} \right) \left( \frac{1\ lb}{7000\ gr} \right) \left( \frac{24.45\ L}{mol\ C_3H_8} \right) \left( \frac{mol\ C_3H_8}{44.1\ g} \right) \left( \frac{454\ g}{1\ lb} \right) \left( \frac{0.035\ scf}{L} \right) (100) = 0.019\%$$

Because weight percent of sulfur in the fuel is proportional to the exhaust SO<sub>2</sub> concentration, the volume exhaust concentration associated with combustion of propane with 0.019% sulfur is 0.003%. This value is 500 times less than that allowed by the applicable county rules. The use of propane with a maximum sulfur content of 0.019% will assure compliance with this requirement. The source has the option of maintaining supplier certification records of propane sulfur content or testing the propane fuel for sulfur content to verify this fuel sulfur content is not exceeded. Template permit conditions #8 - 11 assure compliance with the requirements of these rules.

### V. Permit Shield

A permit shield legally protects a facility from enforcement of the shielded regulations when a source is in compliance with the terms and conditions of the Title V permit (District Rule 2520, 13.2). Compliance with the terms and conditions of the Title V permit is considered compliance with all applicable requirements upon which those conditions are based.

#### **District Rules 4201 and 4604 (formerly 460.4)**

District Rule 4201 has been submitted to the EPA to replace County Rules 402, B.1 (Madera) and 404 (Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, and Tulare). EPA issued a relative stringency finding, dated August 20, 1996, stating that District Rule 4201 is "more stringent" than the county rules referenced above.

By using this template the applicant is requesting a permit shield from District Rules 4201 and 4604 (formerly District Rule 460.4) and County Rules 402, B.1 (Madera), 404 (Kings, Merced, Kern, Tulare, San Joaquin, Stanislaus, and Fresno), 404 (Madera), 406 (Fresno), and 407 (Kings, Merced, Kern, Tulare, San Joaquin, Stanislaus). See template permit conditions #15 and #16.

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<sup>7</sup> Propane contains 15 grains sulfur per 100 scf, maximum (Marks' Standard Handbook for Mechanical Engineers, 8th edition, McGraw-Hill). Also refer to ASTM D1835.

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## **District Rule 4661**

District Rule 4661 replaces Rule 409 in Fresno, Stanislaus, Merced, and San Joaquin counties and Rule 410 in Kern, Tulare, Kings, and Madera counties. Compliance with District Rule 4604 exempts a facility from Rule 4661. A permit shield will be granted for District Rule 4661 because units qualified to use this template are limited to those which are in full compliance with the limits of 4604. A permit shield is granted from this requirement in template permit condition #17.

## **40CFR60, Subpart TT**

A permit shield will be granted for 40 CFR 60 Subpart TT because facilities qualifying to use this template are limited to those which are not metal coil surface coating operations.<sup>8</sup> Coil coating operations could not be conducted using any unit qualifying to use this template without significant modification to the unit which would require an Authority to Construct and resulting new permit. A permit shield is granted from this requirement in template permit condition #18.

## **40CFR60, Subpart WW**

A permit shield will also be granted for 40 CFR 60 Subpart WW because facilities qualifying to use this template are limited to those which are not beverage can<sup>9</sup> surface coating lines. Template condition #11 prohibits the use of any unit subject to this template as a beverage can coating line, pursuant to Subpart WW definition. A permit shield is granted from this requirement in template permit condition #18.

## **VI. Permit Conditions**

Conditions #1 - #4 will not be applicable to all units using this template and therefore will only be incorporated into the Title V permit for any operation to which they apply as follows: condition #1 applies to two-piece can exterior basecoat and overvarnish operations, condition #2 applies to interior and exterior body spray, interior or exterior end spray or rollcoat operations, condition #3 applies to three-piece can side seam spray operations, and condition #4 applies to end sealing compound operations. Conditions #5 - #18 are applicable to all units using this template and will be incorporated into the Title V permit of any operation making use of template #SJV-MC-2-0:

### **Conditions for Two-Piece Can Exterior Basecoat and Overvarnish**

1. Two-piece can exterior basecoat and overvarnish operations shall not use or apply any coating with a VOC content in excess of 250 grams of VOC per liter of coating, as applied, excluding water and exempt compounds. [District Rule 4604, 5.1]

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<sup>8</sup> As defined in 40CFR§60.461(a). See Appendix A.

<sup>9</sup> As defined in 40CFR§60.491(a)(1). See Appendix A.

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## Conditions for Interior and Exterior Body Spray, Interior or Exterior End Spray or Rollcoat Operations

2. Interior and exterior body spray, interior or exterior end spray or rollcoat operations shall not use or apply any coating with a VOC content in excess of 510 grams of VOC per liter of coating, as applied, excluding water and exempt compounds. [District Rule 4604, 5.1]

## Conditions for Three-Piece Can Side Seam Spray Operations

3. Three-piece can side seam spray operations shall not use or apply any coating with a VOC content in excess of 660 grams of VOC per liter of coating, as applied, excluding water and exempt compounds. [District Rule 4604, 5.1]

## Conditions for End Sealing Compound Operations

4. End sealing compound operations shall not use or apply any coating with a VOC content in excess of 440 grams of VOC per liter of coating, as applied, excluding water and exempt compounds. [District Rule 4604, 5.1]

## Conditions for All Metal Can Surface Coating Operations

5. Operator shall maintain and have available during an inspection, a current list of coatings in use providing all of coating data necessary to evaluate compliance including the following information as applicable: 1) specific coatings, catalysts, and reducers used, 2) mix ratio of components used, 3) VOC content of each coating, as applied, and 4) VOC content of each solvent used for cleanup and surface preparation. [District Rule 4604, 6.1.1]

6. Records shall be maintained on a daily basis including the following information: 1) specific coating used and mix ratio of components added to the coating material prior to application, 2) volume of coating applied (gallons), 3) specific solvents used, and 4) volume of each solvent used for cleanup and surface preparation (gallons). [District Rule 4604, 6.1.2]

7. Particulate matter emissions shall not exceed 0.1 gr/dscf in concentration at the point of discharge. [District Rule 4201, 3.1; County Rules 402 (Madera) and 404 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus)]

8. Sulfur compound emissions shall not exceed 0.2% by volume calculated as SO<sub>2</sub> averaged over 15 minutes. [County Rules 404 (Madera), 406 (Fresno), and 407 (Kern, Kings, Merced, San Joaquin, and Stanislaus)]

9. Curing ovens shall be induction heated or fired on either PUC-regulated natural gas with a sulfur content of 0.017% by weight or less; or propane with a sulfur content 0.019% by weight or less. When firing on propane, compliance with fuel sulfur content limit may be demonstrated by maintaining supplier certification of fuel sulfur content; or by fuel analysis for sulfur content. The source shall maintain on file copies of all natural gas and propane bills and records of supplier certifications. [District Rule 2520, 9.1]

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10. When complying with sulfur emission limit by propane fuel analysis, each shipment of propane fuel must be analyzed within the preceding 12 months prior to being fired in the curing oven. [District Rule 2520, 9.4.2]
11. Propane fuel sulfur content analysis shall be determined using ASTM D 1072-80, D 3031-81, D 4084-82, D 3246-81 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.4.2]
12. VOC content of coating(s), as applied, and of solvents used for cleanup and surface preparation shall be determined by EPA Method 24 and analysis of halogenated exempt compounds shall be determined by ARB Method 432 on an annual basis. If the coating/solvent manufacturers provide certification that the previously mentioned methods are used to determine the VOC content, copies of the coating/solvent product data sheets and the certifications may be maintained, used to calculate the VOC content of the coating, as applied, and shall be considered compliance with this condition. [District Rules 2520, 9.4.2 and 4604, 6.2.1]
13. All records of required monitoring data and support information shall be maintained for at least five years. [District Rule 2520, 9.5.2]
14. No two-piece beverage can surface coating unit which may be part of this permit unit shall be used in soft drink or beer (including malt liquor) can manufacturing operations. This prohibition does not apply to coating of containers in which fruit or vegetable juices are packaged. [District Rule 2520, 9.1]
15. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: County Rules 402, B.1 (Madera), 404 (Kings, Merced, Kern, Tulare, San Joaquin, Stanislaus, and Fresno), 404 (Madera) for curing oven fuel emissions only, 406 (Fresno) for curing oven fuel emissions only, and 407 (Kern, Kings, Merced, San Joaquin, Stanislaus, and Tulare) for curing oven fuel emissions only. A permit shield is granted from these requirements. [District Rule 2520, 13.2]
16. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of SJVUAPCD Rules 4201 (as amended December 17, 1992) for curing oven emissions only and 4604 (as amended December 17, 1992), formerly District Rule 460.4. A permit shield is granted from these requirements. [District Rule 2520, 13.2]
17. The requirements of District Rule 4661 (as amended December 17, 1992) do not apply to this permit unit. A permit shield is granted from these requirements. [District Rule 2520, 13.2]
18. The requirements of 40 CFR 60 Subparts TT and WW do not apply to this permit unit. A permit shield is granted from these requirements. [District Rule 2520, 13.2]

APPENDIX A

DEFINITIONS  
FOR  
TEMPLATE #SJV-MC-2-0

# Template SJV-MC-2-0

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## NSPS Definitions

*beverage can:* any two piece steel or aluminum container in which soft drinks or beer, including malt liquor, are packaged. The definition does not include containers in which fruit or vegetable juices are packaged. [40 CFR § 60.491 (a)(1)]

*metal coil surface coating operation:* the application system used to apply an organic coating to the surface of any continuous metal strip with thickness of 0.15 millimeter (mm) (0.006 in.) or more that is packaged in a roll or coil. [40 CFR § 60.461(a)]

## SJVUAPCD Definitions

*metal coil surface coating operation:* any coating containing organic materials and applied by spray, roller or other means to any flat metal sheet or strip that is rolled or wound in concentric rings. [District Rule 4604, 3.1 and 3.2]

## APPENDIX B

### PUC GAS SULFUR CONTENT STANDARDS FOR TEMPLATE #SJV-MC-2-0



# Template SJV-MC-2-0

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GENERAL ORDER 58-B  
(Supplemental to General Order 58-A)

## PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

### HEATING VALUE MEASUREMENT STANDARD FOR GASEOUS FUELS

Approved October 17, 1984. Effective November 16, 1984.  
(Decision 84-10-052, CII 83-11-01)

Original Order Approved December 28, 1955--Effective January 17, 1956

It is ORDERED that the following rules be adopted effective November 16, 1984 to govern all gas corporations as defined in the Public Utilities Code,\* in the determination of heating values of fuel gases. The order also is supplemental to General Order 58-A, which requires utilities to provide and maintain heating value measurement stations and shall not relieve any gas corporation from complying with the provisions of general Order 58-A.

#### 7. Purity of Gas

##### A. Hydrogen Sulfide

No gas supplied by any gas utility for domestic, commercial or industrial purposes in this state shall contain more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet.

##### B. Total Sulfur

No gas supplied by any gas utility for domestic, commercial or industrial purposes shall contain more than five (5) grains of total sulfur per one hundred (100) standard cubic feet.

C. Test procedures used to determine the amounts of hydrogen sulfide and total sulfur shall be in accordance with accepted gas industry standards and practices.

D. When hydrogen sulfide, or total sulfur, exceeds the limits set forth in Section 7.a. and Section 7.b., the gas utility shall notify the Commission and commence remedial action immediately. The Commission shall be notified when the level of hydrogen sulfide, or total sulfur, has been reduced to allowable limits.

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$$\% S \left( \frac{lb S}{lb CH_4} \right) = \left( \frac{5 gr}{100 scf} \right) \left( \frac{1 lb}{7000 gr} \right) \left( \frac{24.45 L}{mol CH_4} \right) \left( \frac{mol CH_4}{16 g} \right) \left( \frac{454 g}{1 lb} \right) \left( \frac{0.035 scf}{L} \right) (100) = 0.017\% \text{ sulfur}$$

## APPENDIX C

EPA COMMENTS / DISTRICT RESPONSE  
FOR  
TEMPLATE # SJV-MC-2-0

# Template SJV-MC-2-0

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## EPA COMMENTS / DISTRICT RESPONSE

The EPA's comments regarding metal can surface coating template SJV-MC-2-0 are encapsulated below followed by the District's response. A copy of the EPA's 6/10/97 letter is available at the District. This template is designed for metal can coating operations which are two- or three-piece can, body- or end-spray, or end-sealing operations at facilities applying greater than three gallons of coating per day.

### General Comments Applicable to both MC-1-0 and MC-2-0:

**1. EPA COMMENT**

*The District should clarify in the Template Qualification Form that this template is not applicable to coil coating operations, as defined by NSPS, subpart TT and District Rule 4604. The District should also include both NSPS, subpart TT and District Rule 4604 definitions for metal coil surface coating operations in Appendix A, Definitions.*

**DISTRICT RESPONSE**

Since the definitions of metal coil surface coating operations contained in NSPS, subpart TT and District Rule 4604 are not identical, both definitions will be included in Appendix A, Definitions, which are referenced in the Template Qualification Form. This will clarify template applicability with regards to coil coating operations.

**2. EPA COMMENT**

*The statement that particulate matter emissions from coating applications are not addressed in the template is located in the last paragraph of the Applicable Requirements section of template MC-2-0, whereas the same discussion is located under the subheading District Rule 4201 in the Compliance section of template MC-1-0. The District should consider keeping the discussion in the same section as appropriate to the topic.*

**DISTRICT RESPONSE**

Section III, Applicable Requirements and section IV, Compliance are both appropriate to the topic of compliance with applicable requirements from section 3.1 of District Rule 4201 regarding particulate matter emission. However, for consistency between the templates, footnotes have been added to District Rule 4201 citations in Table I of section III, Applicable Requirements, explaining that requirements are addressed in the template for curing oven fuel emissions but not for coatings as applied. Compliance with District Rule 4201 limits for coating is site specific and must be addressed in the facility Title V application outside of the template.

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The paragraph in section II of template MC-2-0 discussing particulate matter emissions from coating applications has been relocated to section IV, Compliance to be constant with template MC-1-0. This discussion further explains why compliance for coatings could not be addressed in the template. While this might be considered a duplicate discussion of the information contained in the footnotes of section II, the District wishes to make it obvious to the user what the template does and does not address and why.

### 3. **EPA COMMENT**

*The District should spell out the names of the counties involved when referencing the “seven remaining counties” or the “six remaining counties”, in association with County Rule 404 and 407, respectively, in the Compliance section.*

#### **DISTRICT RESPONSE**

For clarity and consistency with other templates, the District has referenced each county individually as requested.

### 4. **EPA COMMENT**

*In Appendix B, the District shows that in accordance with General Order 58-B, the Public Utilities Commission (PUC) fuel sulfur content standard for natural gas is 0.017% by weight or less. However the District interchangeable uses the words “expected” and “typical” to characterize the 0.017% sulfur content in both templates. The District should use consistent language in describing the sulfur content.*

#### **DISTRICT RESPONSE**

The 0.017% sulfur content is the maximum expected for PUC regulated natural gas. However, typical fuel sulfur content is expected to be much less. The word “typical” has been removed from this section to describe sulfur content since the District is only concerned with the maximum fuel sulfur content in the compliance demonstration.

### 5. **EPA COMMENT**

*In section IV, Compliance, for District Rule 4201 particulate matter emission requirements, the District incorrectly cites AP-42, Table 1.4-2 as the source of the propane emission factor used. The correct reference is AP-42, Table 1.5-1.*

#### **DISTRICT RESPONSE**

This citation has been corrected to read, AP-42, Table 1.5-1. In addition, please note some of the values for factors used in this compliance section have been changed slightly to reflect values contained in the newest version of AP-42, as amended October 1996. These changes have made no difference to the outcome of the compliance demonstration.

### 6. **EPA COMMENT**

*The expression in the compliance section for the fraction of SO<sub>2</sub> in the dry exhaust by volume used to calculate the mole fraction of sulfur (Y) in the natural gas fuel is incorrect. The equation should be written as:  $Y/(1+Y+7.56) = 0.002$ .*

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### **DISTRICT RESPONSE**

The District agrees that this expression is correct as EPA has written in their comment and has made this change as suggested. However, because the molar fuel sulfur content (Y) is very small, inclusion of the value "Y" in the denominator of this equation has negligible effect on the resulting value of "Y" when solving the equation. This equation modification has no effect on the District compliance demonstration.

### **7. EPA COMMENT**

*EPA issued a letter dated 8/20/96 stating District Rule 4201 for particulate matter (PM) emission concentration was more stringent than county Rule 402 (Madera), and 404 (seven remaining counties). As a result, the District requests a permit shield for District Rule 4201 and referenced County Rule 402 and 404. However, after examining the county rules, it is apparent that County Rule 402 (Madera) covers both PM emission concentration and PM emission rates based on process rates. Consequently the District must exclude the portion of county Rule 402 (Madera) dealing with emission rate based on process rate when requesting the permit shield.*

*Also, the paragraph discussing why a permit shield is requested for rules 4201, 402, and 404 should be removed from the end of the discussion in section IV, Compliance, for District Rule 4201 and inserted in section V, Permit Shield, of template MC-1-0. This practice is followed in template MC-2-0.*

### **DISTRICT RESPONSE**

The District agrees EPA was in error when stating District Rule 4201 was more stringent than County Rule 402 (Madera) without qualification. The District has revised section V, Permit Shield, to request a shield for County Rule 402 (Madera) section B.1, which addresses requirements for PM emission concentration.

For clarity and consistency with other templates, the paragraph in template MC-1-0 discussing why a permit shield is requested for rules 4201, 402, and 404 has been removed from the end of the discussion in section IV, Compliance, for District Rule 4201 and inserted in section V, Permit Shield.

### **8. EPA COMMENT**

*The Template Qualification Form excludes use of this template for coil and beverage can coating operations. The template conditions grant the entire source permit shields from the requirements of 40 CFR 60, subparts TT for coil coating operations and WW for beverage can coating operations, due to non-applicability. These permit shields must be restricted or conditions must be added to the template to prohibit the source from operating in a manner which would trigger applicability of the referenced NSPS subparts.*

### **DISTRICT RESPONSE**

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The District has restricted the permit shield to apply to the permit unit instead of the entire source. It is not possible for any permit unit qualifying to use this template to be converted for use as a coil coating operation without significant modification which would require an Authority to Construct and be subject to NSR. Therefore no condition restricting use as a coil coating operation is necessary. However concerning potential operation as a beverage can coating operation, subject to subpart WW, units qualifying to use this template could conceivably be used in such a manner without modification. Therefore the following prohibitory condition has been added to the template:

- No two-piece beverage can surface coating unit which may be part of this permit unit shall be used in soft drink or beer (including malt liquor) can manufacturing operations. This prohibition does not apply to coating of containers in which fruit or vegetable juices are packaged.[District Rule 2520, 9.1]

### 9. **EPA COMMENT**

*The District must add a condition to restrict qualifying sources to those with curing ovens that are induction heated or are fired on natural gas or propane.*

#### **DISTRICT RESPONSE**

The District agrees with EPA's request and has added the following condition:

- Curing ovens shall be induction heated or fired on either PUC-regulated natural gas with a sulfur content of 0.017% by weight or less; or propane with a sulfur content 0.019% by weight or less. When firing on propane, compliance with fuel sulfur content limit may be demonstrated by maintaining supplier certification of fuel sulfur content; or by fuel analysis for sulfur content. The source shall maintain on file copies of all natural gas and propane bills and records of supplier certifications. [District Rule 2520, 9.1]

### 10. **EPA COMMENT**

*The District must add a condition to restrict the PM emission limit from the curing ovens to 0.1 grain/dscf, in order to qualify for a permit shield from the requirements from District Rule 4201..*

#### **DISTRICT RESPONSE**

Worst case expected emissions due to curing oven fuel will be 0.01 gr/dscf or less. Therefore no testing, recordkeeping or monitoring for PM emissions due curing oven fuels only is required for units qualifying to use this template. However the PM emission limit requirement has been added to the template conditions as follows, so that a permit shield may be granted from this requirement:

- Particulate matter emissions shall not exceed 0.1 gr/dscf in concentration at the point of discharge. [District Rule 4201. 3.1; County

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Rules 402 (Madera) and 404 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus)]

## 11. **EPA COMMENT**

*The District must add a condition to require curing ovens fire only PUC regulated natural gas (fuel sulfur content 0.017% or less by weight) or propane with a maximum sulfur content specified as used to demonstrate compliance with applicable emission limits for sulfur compounds. The source must also maintain appropriate certification records.*

### **DISTRICT RESPONSE**

PUC regulated natural gas is required to have a sulfur content of 0.017% or less. Commercial grade propane is not expected to exceed 0.019% sulfur by weight according to Marks' Standard Handbook for Mechanical Engineers, 8th edition. The following conditions have been added to assure compliance with applicable requirements for sulfur emissions:

- Curing ovens shall be induction heated or fired on either PUC-regulated natural gas with a sulfur content of 0.017% by weight or less; or propane with a sulfur content 0.019% by weight or less. When firing on propane, compliance with fuel sulfur content limit may be demonstrated by maintaining supplier certification of fuel sulfur content; or by fuel analysis for sulfur content. The source shall maintain on file copies of all natural gas and propane bills and records of supplier certifications. [District Rule 2520, 9.1]
- When complying with sulfur emission limit by propane fuel analysis, each shipment of propane fuel must be analyzed within the preceding 12 months prior to being fired in the curing oven. [District Rule 2520, 9.4.2]
- Propane fuel sulfur content analysis shall be determined using ASTM D 1072-80, D 3031-81, D 4084-82, D 3246-81 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.4.2]

## 12. **EPA COMMENT**

*The permit shields from the requirements of District Rule 4661 and 40 CFR 60 Subparts TT and WW are too broad. The District must revise these conditions to state that the shield only applies to the emission unit(s).*

### **DISTRICT RESPONSE**

The applicability of these permit shields has been restricted to the permit unit qualifying to use the template.

## 13. **EPA COMMENT**

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*The Template Qualification Form (TQF) must include a criterion to exclude a metal coil surface coating operation subject to District Rule 4604 from qualifying for the template in addition to the current criterion prohibiting a metal coil surface coating operation subject to 40 CFR 60, subpart TT.*

### **DISTRICT RESPONSE**

Please see District Response to EPA Comment #1.



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### 14. **EPA COMMENT**

*The order of the 40 CFR 60 citations in the first two questions of the TQFs must be switched to correctly reflect the subject matter of the question.*

### **DISTRICT RESPONSE**

The first two TQF questions and their citations to 40 CFR 60 have been changed as follows:

- Is the process a beverage can (see Appendix A) surface coating line? [40 CFR § 60.491 (a)(1)] If "no," continue to next question; otherwise STOP - you cannot use this template.

- Is the process a metal coil surface coating operation as defined in 40 CFR § 60.461(a) and District Rule 4604 section 3.0 (see Appendix A)? If "no," continue to next question; otherwise STOP - you cannot use this template.

### 15. **EPA COMMENT**

*The District must add a criterion to the TQF prohibiting a source using the alternative emission control plan from qualifying for the template.*

### **DISTRICT RESPONSE**

Template MC-1-0 contains the following criterion in the TQF which would not allow a facility using the alternative emission control plan to qualify to use the template.

- Does this process use only coatings compliant with District Rule 4604, section 5.1.1 or is it controlled by a VOC destruction device that is either an afterburner or a catalytic incinerator with at least 90% control efficiency, pursuant to section 5.2.2? [District Rule 4604 section 5.2] If "yes", continue to next question; otherwise STOP - you cannot use this template.

Template MC-2-0 contains the following criterion in the TQF which would not allow a facility using the alternative emission control plan to qualify to use the template.

- Is the process in full compliance with District Rule 4604 and using only low VOC content coatings, pursuant to section 5.1? [District Rule 4604, 4.2] If "yes," continue to next question; otherwise STOP - you cannot use this template

In addition, both templates contain conditions insuring that the option of the alternative emission control plan may not be used in lieu of the requirements of section 5.1 and 5.2 of District Rule 4604.

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## Template Specific Comments:

### 16. **EPA COMMENT**

*To be consistent with the language in District Rule 4604, the first criterion on the cover sheet should read, “two-piece can exterior basecoat and overvarnish operations....”*

### **DISTRICT RESPONSE**

The template title page (cover sheet) and section II, Template Applicability are intended to provide the user with a general overview of template application. The Template Qualification Form contains language consistent with cited rules and must be completed to determine actual qualification, pursuant to the statement in section II, Template Applicability. Therefore is not necessary and undesirable for the template title page and Template Applicability sections to be encumbered with specific language from the District Rule. However, the language has been modified for consistency between the two sections, as has been the practice in previous templates.

### 17. **EPA COMMENT**

*To be consistent with the language in district Rule 4604, the first applicability condition should read, “Include surface... basecoats and overvarnish...”; the second condition should read, “Include interior and exterior body spray, interior or exterior end spray...”; the sixth condition should read, “Are not a beverage-can,... sheet basecoats (exterior and interior)....”*

*Also, the word “or” at the end of the fourth condition appears to be a typographical error and should be deleted.*

### **DISTRICT RESPONSE**

Please see District Response to EPA Comment #16.

The word “or” at the end of the fourth condition appears is a typographical error and has been deleted.

### 18. **EPA COMMENT**

*Same as EPA Comment #2.*

### **DISTRICT RESPONSE**

See District Response to EPA Comment #2.

### 19. **EPA COMMENT**

*There is no periodic monitoring is assure compliance with the VOC contents of coatings. Therefore the comment in the first sentence in the paragraph under subheading District Rule 4201... and 4041 (Seven Remaining Counties), stating, “All emission limit requirements addressed in this template are associated with adequate monitoring to assure compliance...” seen to be inaccurate.*

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*For clarity, the District should add the following sentence after the first sentence in the second paragraph under the above subheading: "For the purposes of this template, District Rule 4201 will cover only the PM emitted from the combustion within the curing ovens."*

*The last sentence in the second paragraph under the subheading seems redundant to information discussed in a previous paragraph.*

### **DISTRICT RESPONSE**

This sentence has been modified to more restrictive and state that compliance is assured with the requirements of District rule for curing ovens.

For clarity, the District agrees to add the sentence suggested by EPA after the first sentence in the second paragraph under the above referenced subheading.

The District agrees the last sentence in the second paragraph under the referenced subheading is unnecessary and has removed it from the template.

### **20. EPA COMMENT**

*The District should add a statement in section IV, Compliance that sources using an equivalency, as described in District Rule 4604, section 5.4 are prohibited from using this template..*

### **DISTRICT RESPONSE**

The conditions of this template will not allow for a source using equivalency to use this template, since they require low VOC content coatings to be applied, pursuant to section 5.1 of District Rule 4604. However, for clarity, this statement has been added to the Compliance section.

### **21. EPA COMMENT**

*The District should clarify that the use of control devices is not an option for the purpose of this template.*

### **DISTRICT RESPONSE**

A criterion has been added to the Template Qualification Form (TQF) to restrict sources using control devices from qualifying to use this template.

### **22. EPA COMMENT**

*The District must add a condition to prohibit a source from operating in a manner that would be subject to the sheet basecoating and overvarnish operation covered by template MC-1-0, unless no source that could qualify to use this template has the physical capability to perform this operation.*

### **DISTRICT RESPONSE**

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No source that could qualify to use template MC-2-0 has the physical capacity to perform as a sheet coating operation. Additionally, the Title V permit will have an equipment description specifying what types of coating operations are performed by the equipment covered, as do current District Permits to Operate. Any change to operate as a sheet coating operation would require an Authority to Construct and be subject to NSR.

**23. EPA COMMENT**

*The District must add a condition to require annual testing of the VOC coating content.*

**DISTRICT RESPONSE**

The following condition had been added to assure compliance with the VOC coating content requirements of District Rule 4604:

- VOC content of coating(s), as applied, and of solvents used for cleanup and surface preparation shall be determined by EPA Method 24 and analysis of halogenated exempt compounds shall be determined by ARB Method 432 on an annual basis. If the coating/solvent manufacturers provide certification that the previously mentioned methods are used to determine the VOC content, copies of the coating/solvent product data sheets and the certifications may be maintained, used to calculate the VOC content of the coating, as applied, and shall be considered compliance with this condition. [District Rules 2520, 9.4.2 and 4604, 6.2.1]

**24. EPA COMMENT**

*The number of the first information item in condition #7 should be "4", not "D".*

**DISTRICT RESPONSE**

This typographical error has been corrected.

**25. EPA COMMENT**

*Condition #11 grants a permit shield from the particulate matter (PM) emission requirements of District Rule 4201. This shield is too broad and must be modified since compliance is demonstrated in the template for PM emissions resulting from curing oven only.*

**DISTRICT RESPONSE**

This condition (now #16) has been modified to read as follows:

- Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201(as amended December 17,1992) for curing oven emissions only, and 4604 (as amended December 17, 1992), formerly District Rule 460.4. A

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permit shield is granted from these requirements. [District Rule 2520, 13.2]

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**26. EPA COMMENT**

*The District should add a criterion to the TQF to exclude sources using an equivalency as described in District Rule 4604, section 5.4, from qualifying to use this template.*

**DISTRICT RESPONSE**

Permit units qualifying to use this template must apply low VOC content coatings, pursuant to the TQF and conditions of the permit. The equivalency option allowed by District Rule 4604 is not possible for source operations using this template and is already indirectly addressed in the TQF.

**27. EPA COMMENT**

*The citation for the third criterion in the TQF should be “District Rule 4604, 5.1.1,” not 5.11 and 5.4.1.1. For consistency, the question should also be modified to read, “Is the process a sheet basecoating (exterior and interior) and overvarnish operation?”*

**DISTRICT RESPONSE**

The most appropriate citation for the third criterion is District Rule, section 3.1, since sheet coating is a subpart of the Can and Coil Coating definition contained in that section. Section 5.1.1 contains the VOC coating content limits for sheet coating operations and is not an appropriate citation for this criterion.

Since no flat sheet coating operation may qualify to use this template, the District feels it is unnecessary to change the criterion language as EPA has suggested. In addition this wording is consistent with the District Rule, section 3.1 citation.

APPENDIX D

TEMPLATE QUALIFICATION FORM  
FOR  
TEMPLATE #SJV-MC-2-0

# Template SJV-MC-2-0

## **Title V General Permit Template Qualification Form**

District permit # \_\_\_\_\_

Please answer the questions in the table below. A metal can coating line (process) which meets the criteria of this table is qualified to use this template as part of a Title V application. To use this template, remove this sheet and attach to application.

Yes	No	Description of Qualifying Units
		Is the process a beverage can (see Appendix A) surface coating line? [40 CFR § 60.491 (a)(1)] If "no," continue to next question; otherwise STOP - you cannot use this template.
		Is the process a metal coil surface coating operation as defined in 40 CFR § 60.461(a) and District Rule 4604 section 3.0 (see Appendix A)? If "no," continue to next question; otherwise STOP - you cannot use this template.
		Is the process a flat sheet coating operation? [District Rule 4604, 3.1] If "no," continue to next question; otherwise STOP - you cannot use this template.
		Is the process controlled by a VOC control device, such as an incineration or adsorption device? [District Rule 4604 section 5.2] If "no", continue to next question; otherwise STOP - you cannot use this template
		Does the facility use more than three gallons per day of coatings? [District Rule 4604, 4.1] If "yes", continue to next question; otherwise STOP - you cannot use this template.
		Is the process in full compliance with District Rule 4604 and using only low VOC content coatings, pursuant to section 5.1? [District Rule 4604, 4.2] If "yes," continue to next question; otherwise STOP - you cannot use this template.
		Are all curing ovens associated with this process induction heated or fired exclusively on PUC-regulated natural gas with a sulfur content of less than or equal to 0.017% by weight ( 5 grains/100 scf) or propane with a sulfur content of less than or equal to 0.019% by weight (15 grains/100 scf)? If "no", STOP - you cannot use this template; otherwise you qualify to use this template.

Based on information and belief formed after reasonable inquiry 1) the information on this form is true, accurate, and complete and 2) the facility is in compliance with this template's permit conditions:

\_\_\_\_\_  
Signature of Responsible Official

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of Responsible Official (Please print)